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REMARKS

Claims 1-8, 10-18, and 20 are pending in the application. Claims 1 and 11 have been amended to incorporate the subject matter of claim 9 and 19, respectively, which have been canceled without prejudice. Claims 1 and 11 also have been amended to recite that the first ground portion(s) prevent deformation of the ground structure to ensure grounding performance of the semiconductor package. The amendments are fully supported by the specification as originally filed (see, e.g., page 6, first paragraph and page 11, third paragraph).

Applicants' claimed invention is directed to a ground-enhanced semiconductor package and a lead frame including a die pad, a plurality of leads, and a ground structure. As recited in claims 1 and 11, the ground structure includes at least one of first ground portions, where the first ground portions are separate from each other and connected to both lateral sides of tie bars, and a hollow-out area is formed between the first ground portion and one of the tie bars.

As amended, claims 1 and 11 specifically recite benefits of the ground-enhanced semiconductor package and lead frame, i.e., preventing deformation of the ground structure to assure grounding performance of the semiconductor package.

Claims 1-8, 10-18, and 20 were rejected under 35 USC 102(e) as being anticipated by U.S. Patent Application Publication US 2004/0061205 to Han et al. (hereinafter "Han"). Claims 9 and 19 were rejected under 35 USC 103(a) as being unpatentable over Han in view of U.S. Patent 6,326,678 to Karnozos et al. (hereinafter "Karnozos"). These rejections are respectfully traversed.

Han does not teach or suggest a semiconductor package or lead frame having a ground structure in which first ground portions are connected to both lateral sides of tie bars. Han also does not teach or suggest the Applicants' claimed hollow-out area formed between the first ground portion and one of the tie bars. The Karnozos reference does not remedy these deficiencies of Han.

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Referring to paragraph 0044 and FIG. 3 of Han, ground leads 306 are connected directly to a frame paddle 106 by deep downsets 308. As described in paragraph 0044, the ground leads 306 are similar to the ground leads 110 which support the frame paddle 106 (see paragraph 0034 and FIG. 1).

However, the Applicants' claimed invention recites a ground structure comprising first ground portions, which are connected to tie bars of the lead frame, where each first ground portion is connected to both lateral sides of the tie bars.

Therefore, if the ground leads 306 are collectively considered a "ground structure" (see Office Action of 07/13/2005 at page 2), so that each ground lead 306 would correspond to a "first ground portion," it is clear from the disclosure of Han that each ground lead 306 is not connected to "both lateral sides of the tie bars," as recited in claims 1 and 11.

Instead, Han discloses that each ground lead 306 is connected to a corresponding deep downset 308 (see paragraph 0044 and FIG. 1 of Han), not to "both lateral sides of the tie bars," as claimed.

Moreover, as shown in FIG. 4, signal wires 200 electrically connect the die 108 to signal leads 102, and ground wires 202 electrically connect the die 108 to grounding tabs 302. There is no teaching or suggestion in Han that the chip is electrically connected to the first ground portions by bonding wires.

Regarding claims 9 and 19, which are incorporated into claims 1 and 11, respectively, the Karnezos reference does not teach or suggest first ground portions "connected to both lateral sides of the tie bars."

In Karnezos, the interposer ring sections 208a-208d do not correspond to Applicants' claimed "first ground portions," and are not connected to both lateral sides of tie bars.

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As described in column 5, lines 61-63 of Karnezos, each of the interposer ring sections 208a-208d is wire bonded to one of the leads 250, which is not necessary or desirable with the first ground portions recited in the Applicants' claimed invention.

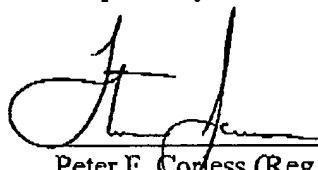
Referring to FIG. 4 of Karnezos, each of the interposer ring sections 208a-208d is only connected to one of the tie bars 241a-241d, respectively. Therefore, Karnezos does not teach or suggest a ground structure in which ground portions are connected to both lateral sides of tie bars.

Further, in Karnezos, the interposer ring sections 208a-208d are not capable of preventing deformation of the ground structure and assuring grounding performance, as provided in the Applicants' claimed invention.

For at least the reasons discussed above, Karnezos could not be combined with Han to somehow produce the Applicants' claimed invention.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



Peter F. Conless (Reg. No. 33,860)
Steven M. Jensen (Reg. No. 42,693)
Edwards Angell Palmer & Dodge
P.O. Box 55874
Boston, MA 02205

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Phone: (617) 439-4444

Customer No. 21874